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CLAIMS

1. (original) A method for configuring an optical network having a plurality of nodes and a plurality of light-paths between the nodes, comprising the steps of:

firstly concatenating together a first set of the light-paths into circular segments;

and

secondly concatenating together a second set of the light-paths into non-circular segments, the second set of the light-paths being comprised of a remainder of the plurality of light-paths less the first set of the light-paths. *thin, thin*

2. (original) A method according to claim 1, wherein the firstly and second concatenating steps are performed so that no light-path in any of the circular segments and non-circular segments overlaps another light-path in the same circular segment and non-circular segment.

3. (original) A method according to claim 1, wherein the circular segments comprise at least one of the plurality of light-paths, a starting node of the at least one light-path and a terminating node of the at least one light-path being the same one of the plurality of nodes.

4. (original) A method according to claim 3, wherein the circular segments comprise at least first and second ones of the plurality of light-paths, a terminating node of the first light-path and a starting node of the second light-path being the same one of the plurality of nodes.

5. (original) A method according to claim 1, wherein the non-circular segments comprise at least one of the plurality of light-paths, a starting node of the at least one light-path and a terminating node of the at least one light-path being different ones of the plurality of nodes.

6. (original) A method according to claim 5, wherein the non-circular segments comprise at least first and second ones of the plurality of light-paths, a terminating node of the first light-path and a starting node of the second light-path being the same one of the plurality of nodes.

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7. (original) A method according to claim 1, wherein the firstly concatenating step includes the step of searching the plurality light-paths in a top-down fashion so that circular segments having fewer light-paths are concatenated together before circular segments having more light-paths.

8. (original) A method according to claim 1, wherein the secondly concatenating step includes the step of searching the remainder of the plurality of light-paths in a reverse top-down fashion so that non-circular segments having more light-paths are concatenated together before non-circular segments having fewer light-paths.

9. (original) A method according to claim 1, wherein the firstly concatenating step includes the steps of:

firstly determining whether any N of the light-paths can be concatenated together to form one of the circular segments, wherein N is greater than or equal to one;
adding the any N light-paths determined in the firstly determining step to the first set of the light-paths;

secondly determining whether any $N+M$ of the light-paths, less the any N light-paths added to the first set of the light-paths, can be concatenated together to form another of the circular segments, wherein M is greater than or equal to one; and

adding the any $N+M$ light-paths determined in the secondly determining step to the first set of the light-paths.

10. (original) A method according to claim 1, wherein the secondly concatenating step includes the steps of:

firstly determining whether any N of the remainder of the plurality of light-paths can be concatenated together to form one of the non-circular segments, wherein N is less than or equal to a number of the plurality of nodes;

adding the any N light-paths determined in the firstly determining step to the second set of the light-paths;

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secondly determining whether any N-M of the remainder of the plurality of light-paths, less the any N light-paths added to the second set of the light-paths, can be concatenated together to form another of the non-circular segments, wherein M is greater than or equal to one; and adding the any N-M light-paths determined in the secondly determining step to the second set of the light-paths.

11. (original) A method according to claim 9, wherein the secondly concatenating step includes the steps of:

thirdly determining whether any J of the remainder of the plurality of light-paths can be concatenated together to form one of the non-circular segments, wherein J is less than or equal to a number of the plurality of nodes;

adding the any J light-paths determined in the thirdly determining step to the second set of the light-paths;

secondly determining whether any J-K of the remainder of the plurality of light-paths, less the any J light-paths added to the second set of the light-paths, can be concatenated together to form another of the non-circular segments, wherein K is greater than or equal to one; and

adding the any J-K light-paths determined in the secondly determining step to the second set of the light-paths.

12. (original) A method according to claim 1, wherein the firstly and secondly concatenating steps are performed so that a number of the non-circular segments is minimized.

13. (original) A method according to claim 1, further comprising the step of: assigning a respective unique wavelength to each of the circular segments and non-circular segments in accordance with an OWDM scheme.

14. (original) An optical network comprising:

a plurality of nodes; and

a plurality of light-paths between the nodes,

wherein a first set of the light-paths are concatenated together into circular segments,

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and

wherein a second set of the light-paths are concatenated together into non-circular segments, the second set of the light-paths being a remainder of the plurality of light-paths less the first set of the light-paths.

15. (original) An optical network according to claim 14, wherein the first set of light-paths are concatenated together by searching the plurality light-paths in a top-down fashion so that circular segments having fewer light-paths are concatenated together before circular segments having more light-paths.

16. (original) An optical network according to claim 14, wherein the second set of light-paths are concatenated together by searching the remainder of the plurality of light-paths in a reverse top-down fashion so that non-circular segments having more light-paths are concatenated together before non-circular segments having fewer light-paths.

17. (original) An optical network according to claim 14, wherein a number of the non-circular segments is minimized.

18. (original) An optical network according to claim 14, wherein each of the light-paths concatenated together in the circular segments and non-circular segments are assigned respective unique wavelengths in accordance with an OWDM scheme.

19. (original) An optical network according to claim 14, wherein no light-path in any of the circular segments and non-circular segments overlaps another light-path in the same circular segment and non-circular segment.

20. (original) An optical network according to claim 14, wherein the circular segments comprise at least one of the plurality of light-paths, a starting node of the at least one light-path and a terminating node of the at least one light-path being the same one of the plurality of nodes.

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21. (original) An optical network according to claim 20, wherein the circular segments comprise at least first and second ones of the plurality of light-paths, a terminating node of the first light-path and a starting node of the second light-path being the same one of the plurality of nodes.

22. (original) An optical network according to claim 14, wherein the non-circular segments comprise at least one of the plurality of light-paths, a starting node of the at least one light-path and a terminating node of the at least one light-path being different ones of the plurality of nodes.

23. (original) An optical network according to claim 22, wherein the non-circular segments comprise at least first and second ones of the plurality of light-paths, a terminating node of the first light-path and a starting node of the second light-path being the same one of the plurality of nodes.